UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,079	09/12/2003	Michael W. Morrow	ITL.1028US (P16764)	7093

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EXAMINER
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ART UNIT	PAPER NUMBER
2183	

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/661,079	MORROW, MICHAEL W.
	Examiner	Art Unit	
	Daniel Pan	2183	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 June 2006</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-30* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All b)☐ Some * c)☐ None of:

　　　　1.☐ Certified copies of the priority documents have been received.

　　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

1.   Claims 1-6,8-29 are remain for examination. Claim 30 is added. Claim 7 has been canceled.

2.   Claims 1 ,8,13,17,22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The reasons follow.

3.   As to the newly amended claims 1,8, 13,   no substantial details of the instruction components that causes the long latency/stall, nor the details functionalities of the switching and the execution of the one or more instructions of the second thread can be fond in the claim. Therefore, based on the broadest interpretation, the features of switching based on the determination and execution of the instructions of the second thread are read as an abstract idea. The focus is not on the steps or features taken to achieve the final result which is useful, concrete, and tangible, but rather that the final result achieved is useful, concrete, and tangible (see page 20 of 101 Interim Guidelines published at uspto.gov). Although claim recite executing the one or more instructions of the second thread, no positive limitation, or concrete and substantial final result can be found in the claims. AS to the machine readable storage medium in clam 13, the machine readable storage medium is not limited to hardware because in addition to the CD ROMs, optical disks and flash memories etc, applicant also disclosed any type of media suitable for storing electronic instructions (see page 13, lines 1-6). No positive definition of "any type of media" can be found in the claim.   And, since applicant taught a wireless device (see page 13, lines 7-8), the "any type of media" is read as wireless media based on the broadest interpretation. Therefore, is not limited to

hardware. More details components of the instructions to impart the functionalities of the switching would be helpful.

4.   As to claim 17, the coupling of the first pipeline stage and second pipeline stage could be a timing relationship so as the processor pipeline, and the feedback would be a trigger in the timing diagram. No detailed structural elements of the apparatus can be found in the body of the claim.

5.   As to claim 22, although newly amended claim 22 additional recites the processor pipeline to provide the feedback signal form instruction decoder to an instruction fetch unit to cause the processor pipeline for switching, no detailed structure of the processor pipeline can be found in the claim. Furthermore, the feedback loop is not recited as a circuit. If the feedback loop were a hardware circuit, no detailed components of the feedback loop (circuit) can be found in the claim.

6.   Claim 1-3,8,10,1 1 ,17 are rejected under 35 U.S.C. 102(b) as being anticipated by Eickemeyer et al. (6,049,867) ,

7.   As to the amended claim 1, the language "potentially cause" the long latency does not affect the original scope of may require long latency. Eickemeyer also switched to second thread based on a determination and executed instruction of a second thread (see , see the switching to next thread due to miss latency in col.5, lines 42-65, see also claims 8,13 for similar amendments).

8.   As to the newly amended feature of coupling and the feedback of the first

pipeline stage and second pipeline stage, Eickemeyer also taught the feedback of the

first pipeline stage and second pipeline stage (see the trigger to refill the instruction

pipeline cycles in col.4, lines 27-55).

9.   Claim 1-9, 11-14,16 21 , 30 are rejected under 35 U.S.C. 102(b) as being

anticipated by Borkenhagen et al. (6,076,157)

10.   As to the amended claim 1, Borkenhagen also switched to second thread based

on a determination and executed instruction of a second thread (see the thread

switching from T0- T1 in col.16, lines 37-58).

11.   As to the lookup table in claim 4, see look aside table in col.8, lines 40-49.

12.   As to new claim 30, Borkenhagen also included instruction types (see the RISC

and VLIW instruction types in col.3, lines 21-33).

13.   Claims 2 , 10 , 15 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Borkenhagen in view of Chaudhry (2003/0018826)

14.   Claims 22, 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Borkenhagen (6,076,157) in view of Rompaey et al. (5,870,588) .

15.   As to the newly amended feature of instruction decoder to fetch unit,

Borkenhagen also taught a feedback from an instruction decoder to fetch unit (see the

feedback signal routed from look aside table, a decoder, to sequencer in col.9, lines 13-20, sequencer was used as instruction fetching , see col.8, lines 50-64).

16.   Claims 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borkenhagen (6,076,157) in view Rompaey (5,870,588) as applied to claim 22, and further in view of in view of Chaudhry (2003/0018826).

17.   The rejections are maintained and incorporated the last Office action on 03/14/06.

18.   The response field on 06/02/06 ahs been fully considered but is not persuasive.

19.   In the remarks , applicant argued that :

a) execution of one or more instructions of the second thread, therefore physical transformation exists;

b) processor pipeline is clearly hardware;

c) potential cause the long latency is not actual latency;

d) Eickmeyer's saving of the thread I state for determining enabling the switching is not the last instruction ;

e) stochastic analysis is a statistical analysis in the specification;

f) no feedback loop or feedback signal coupled between pipelined stages;

g) Borkenhagen is directed to actual failure;

h) applying instruction to a lookup table is not taught.

20.   As to a), see discussions in paragraph 3 above.

21.   As to b), the processor pipeline is not clearly hardware (see discussions in

paragraphs 4,5).

22.   As to c), applicant never defined potential cause a long latency is not actual

long latency, or the like. Furthermore, Eickmeyer's miss is a potential long latency

because the period of the latency caused by miss had not been completed on the

switching. Therefore, it could be a cause for a long latency.

23.   As to d), Eickmeyer taught saving of the thread i state before switching. A thread

is composed of instructions (see background teaching g in Eickmeyer). The state

being saved must be at least the conditions of the last instruction in the first thread

(thread I) before switching.

24.   As to e), No specific type of statistic analysis is being reflected into the claim.

Therefore, Eickmeyer's valid bit is a statistic analysis. applicant is reminded that

unclaimed features cannot be used to overcome the prior art (e.g. see CCPA In re

Lundenberg & Zuschlag, 113, USPQ 530, 534 (1957)).

25.   As to f), Eickmeyer did have a feedback loop or feedback signal (see feedback

YES in fig.4) coupled between pipelined stages (see process 116,118 while staling on

miss, the second pipeline is starting on 122-130 in fig.4).

26.   As to g), applicant never claimed actual failure or non actual failure.

27.   As to h), Borkenhagen taught clearly an instruction in executing thread could

disable any of or all the thread switch bit conditions (see col.13, lines 39-45). As to

the lookup table , see thread switch bit conditions assignment list in col.45, lines 45-

67. Therefore, applying instruction to a lookup table is taught.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dan Pan whose telephone number is 571 272 4172.

The examiner can normally be reached on M-F from 8:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chan, can be reached on the new number 571 272 4162. The fax phone

number for the organization where this application or proceeding is assigned is 703 306

5404.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

21 Century Strategic Plan

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PRIMARY EXAMINER
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